FACT SHEET

EPA Region 7

Peoples Natural Gas Site
Dubuque, Iowa

May 2000

INTRODUCTION

This fact sheet has been prepared by the U.S. Environmental Protection Agency (EPA). It provides an update of activities at the five-acre Peoples Natural Gas Superfund site, Dubuque, Iowa. The site is located between East 11th Street and Kerper Boulevard approximately ¼-mile east of downtown Dubuque in an industrial area near the Mississippi River.

The city of Dubuque owns the eastern portion of the site and operates a public works garage on the property. The Iowa Department of Transportation owns the western portion of the site. Highway 61 was constructed on the western portion of the site after contaminated soil was removed. MidAmerican Energy Company (formerly Midwest Gas) is conducting the work at the site.

SITE BACKGROUND

The Peoples Natural Gas site is the location of a former coal gasification plant which produced manufactured gas from approximately 1910 to 1954. Production ceased when natural gas was introduced to the community. During operations at the plant, waste products, such as coal tar sludge and iron oxide, were generated and disposed on the site. The coal tar sludge contained several hazardous substances that contaminated the soil and ground water on site. Lead, volatile organic compounds, and polycyclic aromatic hydrocarbons (PAHs) were present at levels in the soil and ground water that could harm people if they came into contact with them. In 1990, the site was placed on the EPA's National Priorities List, the list of the nation's most serious hazardous waste sites.

In 1991, after receiving comments from the public, EPA signed a Record of Decision (ROD), the document that explains the cleanup plan for the site. The cleanup plan consisted of the following:

- Excavation and incineration of contaminated soils and coal tar sludges. This was completed in 1998.

- Extraction and treatment of ground water in the shallow or silty sand aquifer. This system was installed in 1996 and continues to operate. Ground water is pumped out of the ground and treated to remove the contaminants. The treated water is discharged to the sanitary sewer. This system cleans up the ground water and prevents the contamination

from spreading.

• Treatment of contaminated ground water and source soils using bioremediation. Bioremediation is a process that uses natural microorganisms to digest contaminants and break them down into nonhazardous components. Studies conducted at the site show an ozone sparging system would enhance the cleanup of contaminants. Ozone sparging involves injecting high levels of oxygen into the soil and ground water which stimulates bioremediation. This system has not been installed.

• Extraction, treatment, and monitoring of ground water in the deeper or alluvial aquifer. Through additional testing, EPA determined that this wasn't as beneficial as was previously thought and issued a change to the original cleanup plan. This change is called an Explanation of Significant Differences (ESD) and is explained below.

EXPLANATION OF SIGNIFICANT DIFFERENCES

As part of the pre-design for the extraction and treatment system in the deeper aquifer, twelve wells were installed to monitor ground water contamination and an extraction well was installed to pump contaminated ground water out of the ground. A pumping test was performed which yielded two unexpected results. Ground water samples taken from the monitoring wells in the deeper aquifer did not have levels of site contaminants that were greater than the cleanup levels established for the site. And pumping ground water out of the deeper aquifer appeared to cause contamination to spread from the shallow to the deeper aquifer. Because of the new information from the pumping test, it was necessary to make a change to the ROD.

Instead of extracting and treating ground water as originally stated in the ROD, the contamination in the deeper aquifer will be monitored. Samples will be taken from the monitoring wells quarterly for five years and regularly until cleanup levels are met for three consecutive monitoring periods. If the data from the monitoring wells indicate contaminant levels regularly exceed the cleanup levels, an extraction system for the deeper aquifer will be designed and implemented.

FIVE-YEAR REVIEW

EPA conducts regular checkups, called five-year reviews, at Superfund sites where future use is limited because contamination remains on site or where the cleanup takes more than five years. The first five-year review is conducted five years after construction of the remedy has begun. The purpose of the five-year review is to make sure the remedy continues to protect human health and the environment and is functioning as designed. EPA conducts five-year reviews by collecting updated information on the site and reviewing that information.

Overall, the five-year review at the Peoples Natural Gas site found the remedies selected for the site continue to protect human health and the environment. However, EPA has made the following recommendations:

• Operation of the ground water extraction and treatment system in the shallow aquifer

should be closely monitored and maintained regularly to keep it operating properly. The ground water extraction and treatment system in the shallow aquifer continues to be effective in controlling and treating the contaminated ground water as long as regular maintenance is conducted. In the past, dissolved particles and iron in the ground water have fouled the system and reduced its performance.

• Different laboratory procedures need to be used to determine if the cleanup levels for PAHs in the ground water have been met. The current procedures are not always accurate enough to provide this information.

• Bioremediation to treat contaminated ground water and soil at the source area should be implemented as soon as the system can be designed and installed.

Another five-year review will be conducted at the site by the year 2005 to ensure that the remedy continues to protect human health and the environment.

ADDITIONAL INFORMATION

Site-related documents, such as the ROD, ESD, and the five-year review are available to the public during normal business hours at the following locations:

Carnegie-Stout Public Library
11th and Bluff
Dubuque, Iowa 52001

Environmental Protection Agency
901 North 5th Street
Kansas City, Kansas 66101

If you have questions about this fact sheet or need additional information regarding this site, please contact:

Diane Huffman, Community Involvement Coordinator
U.S. Environmental Protection Agency Region 7
Office of External Programs
901 North 5th Street
Kansas City, Kansas 66101
(913) 551-7003 or toll free at 1-800-223-0425
E-mail: huffman.diane@epa.gov

###